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SECTION A

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INDEX

SECTION A.—PHYSICS

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KEY

TO

SUBJECT INDEX.

The Domain of Physics is divided into eight Main Classes (*e.g.*, **GENERAL PHYSICS**). Each of these Classes is, in general, divided into a number of Sections, the titles of which are known as Key-headings (*e.g.*, **Elasticity and Plasticity**), and these Sections are in turn divided into Sub-sections under titles known as Sub-headings (*e.g.*, " Photo-elasticity "). The Key-headings are given below arranged in alphabetical order in their Classes, and the scheme of Sub-headings adopted is indicated in the remainder of the Key.

In the Subject Index these Key-headings are arranged in alphabetical order throughout the whole Index.

The general form of entry of a paper consists of its Title, the Author's Name and the Abstract Number assigned to the paper, the sequence of the entries under any Sub-Heading being the order of publication of the Abstracts as indicated by their Abstract Numbers.

Papers on **Apparatus and Instruments** are classified, in alphabetical order, in a **Supplementary Index** which immediately follows the SUBJECT INDEX.

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Adsorption (See Surface Properties).
Atomic and Molecular Structure.
Colloids.
Crystal Structure and Special Properties.
Density.
Diffusion and Osmosis.
Elasticity and Plasticity.
Gravitation.
Hydrodynamics and Aerodynamics.
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Mathematical Methods and Theory of Measurements.
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Mechanics, Quantum.
Philosophy of Scientific Method.
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All Abstracts relating to this subject are indexed under Radioactivity.

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Interference, Diffraction and Scattering.
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Photometry.
Polarization.
Reflection, Refraction and Dispersion.
Spectroscopy.
Transmission.
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X-rays.

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Convection.
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Thermodynamics.
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All Abstracts relating to this subject are indexed under Acoustics.

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Conduction in Solids and Liquids.
Dielectrics and Capacitance.
Electrochemistry.
Electrons, Neutrons, Positrons and Protons.
Electrostatics.
Galvanomagnetic and Thermomagnetic Effects.
Magnetism and Electromagnetism.
Medical Radiology and Electrology.
Oscillations and Waves.
Photo-electricity.
Piezo-electricity.
Thermionics.
Thermo-electricity.

KEY-HEADINGS WITH SUB-HEADINGS.

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1. Visible Region.
2. Infra-red Region.
3. Ultra-violet Region.
4. Apparatus, *see* Supplementary Index.
5. Unclassified.

Cross-References :
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Cosmic Rays, *see* Emission (Radiation).
Diathermancy, *see* Transmission (Radiation).

Cross-References (contd.) :
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Electric Waves, *see* Oscillations and Waves, Electric.
γ-rays, *see* Radioactivity.
Meteorological Optics, *see* Meteorology.
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X-ray Absorption, *see* X-rays.

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2. Plates, Rods and Membranes.
3. Vibrating Columns of Air or other Gases.
4. Strings.
5. Velocity, Measurement of.
6. Propagation in the Atmosphere.
7. Supersonic Vibrations.
8. Architectural Acoustics.
9. Receivers and Reproducers.
10. Speech and Hearing. Noise.
11. Measurements of Absorption, Amplitude, Intensity, Frequency, Wave-form, Radiation Pressure.
12. Apparatus, *see* Supplementary Index.
13. Unclassified.

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1. Circuit Theory.
2. A.C. Bridges, Applications of.
3. H.F. Measurements (*see also* Dielectrics and Capacitance).
4. Apparatus, *see* Supplementary Index.
5. Unclassified.

Cross-Reference :
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Astronomical Apparatus and Observatory Equipment.

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Atomic and Molecular Structure. Page 832.

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2. Isotopes and Isobares.
3. Periodic System.
4. Valency.
5. Molecular Structure (*see also* Spectroscopy).
6. Allotropy.
7. Association.
8. Atomic and Molecular Magnitudes.
9. Apparatus, *see* Supplementary Index.
10. Unclassified.

Cross-References :
Artificial Disintegration, *see* Radioactivity.

Cross-References (contd.) :
Atomic and Molecular Rays, *see* Kinetic Theory of Matter.
Atomic and Molecular States and Vibrations, *see* Spectroscopy.
Critical Potentials, *see* Conduction (Electric) and Discharge in Gases.
Dipole Moments and Molecular Polarization, *see* Dielectrics and Capacitance.
Liquid Structure, *see* Crystal Structure and Special Properties.
Nuclear Moments, *see* Spectroscopy.

Calorimetry. Page 837.

1. Specific Heat:
   (*a*) Gases.
   (*b*) Liquids.
   (*c*) Solids.
2. Latent Heat:
   (*a*) Fusion.
   (*b*) Evaporation.
3. Apparatus, *see* Supplementary Index.
4. Unclassified.

Cross-References :
Heat of Adsorption, *see* Surface Properties.
Heat of Combustion, Formation, Dissociation, Solution and Dilution, *see* Thermochemistry.
Thermodynamics of Specific Heat and Latent Heat, *see* Thermodynamics.

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   (*a*) Formation and Composition.
   (*b*) Optical Properties.
   (*c*) Viscosity and Mechanical Properties.
3. Gels :
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   (*b*) Optical Properties.
   (*c*) Viscosity and Mechanical Properties.
   (*d*) Swelling, Shrinking, Synæresis.
   (*e*) Membranes.
4. Fibres.
5. Emulsions and Suspensions.
6. Electrical Properties (Coagulation, Cataphoresis, Electro-osmosis, etc.).
7. Structure.
8. Apparatus, *see* Supplementary Index.
9. Unclassified.

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Surface Phenomena, *see* Surface Properties.

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1. Theory.
2. Apparatus, *see* Supplementary Index.
3. Unclassified.

Cross-Reference :
See also Vision.

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1. Comets.
2. Meteors.

Conduction (Electric) and Discharge in Gases. Page 843.

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2. Conduction at Higher Pressures (Order of one Atmosphere).
   Spark and Arc. Mobility of Ions.
   Recombination of Ions.
3. Low-pressure Discharge. Dark Space. Cathode Fall of Potential. Negative Glow. Positive Column. Electrodeless Discharge.
4. Ionization by Electron Impact. Critical Potentials.
5. Ionization by Collision with Atoms and Ions.
6. Ionization by Chemical Action.
7. Positive Rays (Canal Rays). Anode Rays.
8. Chemical Effects of Discharge.
9. Apparatus, *see* Supplementary Index.
10. Unclassified.

Cross-References :
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Diffraction, Scattering, Reflection, etc., of Electrons; Electron Optics; Cathode-ray Oscillographs ; Secondary Emission; *see* Electrons, etc.
Luminous Effects, *see* Spectroscopy.

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2. Voltage Measurement.
3. Current Measurement.
4. Resistance Measurement.
5. Current and Voltage Stabilization and Amplification.
6. A.C. Resistance. Skin Effect.
7. Effects of Temperature, Pressure and Mechanical Stress on Resistivity.
8. Surface Conduction. Contact Resistance (including Contact Rectifiers).
9. Special Effects (Super-conductivity, etc.).
10. Conductivity.
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    (*b*) Liquids (including Solutions).
    (*c*) Dielectrics.
11. Apparatus, *see* Supplementary Index.
12. Unclassified.

Cross-References :
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Photoconductivity, *see* Photoelectricity.
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Units of Measurement, *see* Mathematical Methods, etc.

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2. Conductivity Coefficients :
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   (*b*) Liquids.
   (*c*) Solids.
3. Apparatus, *see* Supplementary Index
4. Unclassified.

Convection. Page 848.

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2. Forced Convection.
3. Emissivity and Rate of Cooling (including Loss of Heat by Radiation, Conduction and Convection).
4. Apparatus, *see* Supplementary Index.
5. Unclassified.

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   (*c*) Organic.
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4. Morphology of Crystals (Crystal Form, Habit, Growth).
5. Special Properties.
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7. Unclassified.

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2. Density of Liquids.
3. Density of Solids.
4. Apparatus, *see* Supplementary Index.
5. Unclassified.

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2. Dielectric Constants and Electric (Dipole) Moments :
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   (*b*) Liquids and Colloids.
   (*c*) Solids.
3. Effects of Electric and Magnetic Fields.
4. Effect of Frequency.
5. Effects of Mechanical Stress, Temperature and Moisture.
6. Dielectric Loss.
7. Capacitance and its Measurement.
8. H.F. Measurements (*see also* Alternating-current Networks).
9. Apparatus, *see* Supplementary Index.
10. Unclassified.

Cross-References :

Conduction, Electrical, in Dielectrics, *see* Conduction (Electric) in Solids and Liquids.
Electric Breakdown, *see also* Section B.—Electrical Engineering.

Diffusion and Osmosis. Page 857.

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2. Osmosis.
3. Membrane Equilibria.
4. Porosity.
5. Apparatus, *see* Supplementary Index.
6. Unclassified.

Cross-Reference :

Electro-osmosis, *see* Colloids.

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5. Vibrations and Waves.
6. Strength and Failure Tests.
7. Apparatus, *see* Supplementary Index.
8. Unclassified

Cross-References :

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Elastic Properties of Colloids, *see* Colloids.
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2. Concentration Cells.
3. Electrolysis.
4. Ionic Mobilities and Transport Numbers.
5. Electrode Potentials and Electrode Phenomena.
6. Apparatus, *see* Supplementary Index.
7. Unclassified.

Cross-References :
Becquerel Effect, *see* Photo-electricity.

Cross-References (contd.) :
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Electrokinetic Phenomena, *see* Colloids.
Photovoltaic Cells, *see* Photo-electricity.
Theories of Solution, *see* Solution.
Thermodynamics of Cells, *see* Thermodynamics.

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2. Magnetic Rotation of Plane of Polarization.
3. Apparatus, *see* Supplementary Index.
4. Unclassified.

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Stark Effect, *see* Spectroscopy.
Zeeman Effect, *see* Spectroscopy.

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1. Constitution.
2. Magnitudes (Charge, Mass, Magnetic Moments, etc.).
3. Collision : Diffraction, Scattering, Reflection, Absorption, Polarization, Secondary Emission.
4. Diffusion.
5. Electron Optics.
6. Cathode-ray Oscillographs, Applications of.
7. Apparatus, *see* Supplementary Index.
8. Unclassified.

Cross-References :
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See also Atomic and Molecular Structure, *also* Radioactivity.

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1. Theory.
2. Frictional Electricity.
3. Contact Potential.
4. Apparatus, *see* Supplementary Index.
5. Unclassified.

Cross-References :
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Dielectric Constants, *see* Dielectrics and Capacitance.
Units, *see* Mathematical Methods, etc.

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1. General Theory (*see also* Mechanics, Quantum).
2. Black-body Radiation. Total Intensity and Spectral Distribution (Theoretical and Experimental).
3. Selective Radiation.
4. Cosmic Rays.
5. Mechanical Effects (Photophoresis, etc.).
6. Apparatus, *see* Supplementary Index.
7. Unclassified.

Cross-References :
Electric Waves, *see* Oscillations and Waves, Electric.

Cross-References (contd.) :
Emissivity and Rate of Cooling by Combined Convection, Conduction and Radiation, *see* Convection of Heat.
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2. Phosphorescence.
3. Luminescence and Afterglow.
4. Apparatus, *see* Supplementary Index.
5. Unclassified.

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1. Melting Points.
2. Liquefaction and Solidification.
3. Apparatus, *see* Supplementary Index.
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Cross-References :
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   (*c*) Change of Resistance in Magnetic Field.
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   (*a*) Nernst Effect.
   (*b*) Leduc Effect.
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4. Unclassified.

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3. Apparatus, *see* Supplementary Index.
4. Unclassified.

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   (*b*) Gravitational Methods.
   (*c*) Magnetic Methods.
1. Surveying and Prospecting (*contd.*):
   (*d*) Seismic Methods.
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3. Unclassified.

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5. Unclassified.

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6. Unclassified.

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Raman Effect, *see* Spectroscopy.

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4. Brownian Motion.
5. Apparatus, *see* Supplementary Index.
6. Unclassified.

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4. Soil Physics.
5. Earth Tides.
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7. Unclassified.

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4. Unclassified.

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7. Apparatus, *see* Supplementary Index.
8. Unclassified.

Cross-References :
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3. Statistical Mechanics (Classical).
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5. Unclassified.

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Cross-References (contd.) :
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2. Statistical Mechanics (Quantum).
3. Experimental Determination of "*h*."
4. Unclassified.

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6. Unclassified.

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5. Climatology.
6. Optical Phenomena (Aurora, Night Sky, Visibility, Corona, Halo, etc.).
7. Apparatus, *see* Supplementary Index.
8. Unclassified.

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3. Rectification.
4. Measurement of Frequency.
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   (*b*) In Ionosphere.
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8. Unclassified.

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   (*c*) Sensitivity and Properties of Emulsions.
   (*d*) Latent Image and Photographic Effects.
   (*e*) Cinematography and Colour Photography.
   (*f*) Applications. Industrial Reproduction.
   (*g*) Apparatus, *see* Supplementary Index.
   (*h*) Unclassified.

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3. Photo-electric Cells, Properties of.
4. Photo-conductivity.
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6. Applications.
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8. Unclassified.

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3. Physical Methods.
4. Standards, Units.
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6. Unclassified.

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2. Piezo-electric Oscillations.
3. Pyro-electricity.
4. Apparatus, *see* Supplementary Index.
5. Unclassified.

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5. Unclassified.

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6. Unclassified.

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3. Unclassified.

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7. Apparatus, *see* Supplementary Index.
8. Unclassified.

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Neutrons and Positrons, *see also* Electrons, etc.

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3. Aberration (Spherical and Chromatic), Tests for Definition, Distortion, Astigmatism, etc.
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   (*b*) Refractometers.
   (*c*) Goniometers.
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